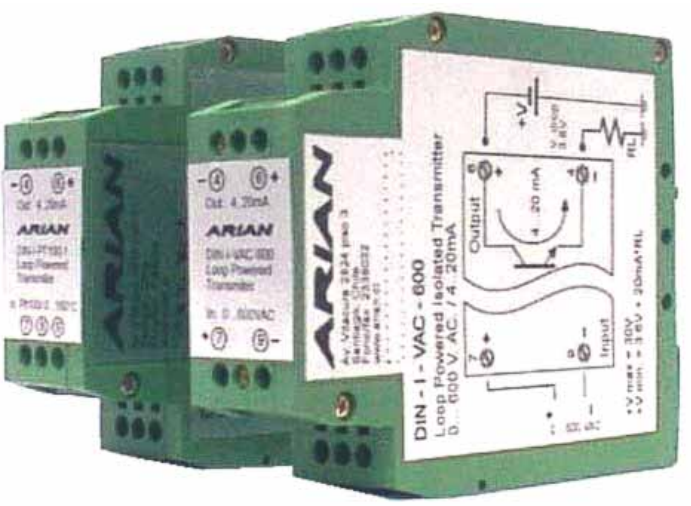
ARIAN
Industrial Control & Instrumentation




# DIN-I-XXX:
# Loop Powered 4... 20mA Galvanic Insulating Transmitters

- **Conditions Pt100, Thermocouple, voltage and current signals for PLC input as 4...20 mA in safe and reliable form.**
- **Do not need any additional power supply.**
- **Galvanic Aislacion.**
- **Extreme connection simplicity.**
- **Service and 5 years guarantee.**

## GENERAL DESCRIPTION

The DIN-I-XXX insolating transmitter modules facilitate the 4... 20 mA analog signal input to PLC's.

Its outstanding characteristic is that they do not require any additional power supply because the modules are completely powered by the 4... 20 mA output current loop, simplifying installation and wiring.

Module input are signals coming from sensors (thermocouples, Pt100, load cells), voltages and currents, AC or DC.
The output is always a galvanically isolated 4... 20 mA loop proportional to the input.

***Advantages***

Galvanic isolation eliminates the problems produced by ground potencial differences in the plant and reduces the ones produced by electromagnetic interference.
The isolation provided by each module allows to use nonisolated 4... 20mA PLC input channels (of smaller price).

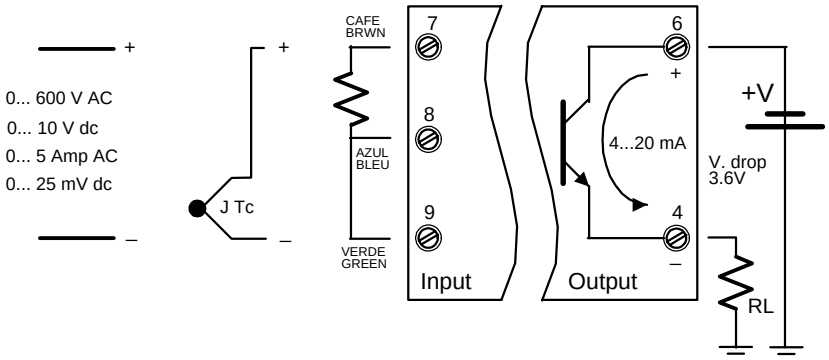
Other applications can be:

- Inflammable or explosive enviromment instrumentation.
- Thermocouple compensated cable saving in long distances.
- Generating floating ground for several 4...20mA instruments interconnect.
- Measure differential voltage (by example, load cell)
- PC analog signal input for laboratory use.

## TECNICAL SPECIFICATIONS

| | | |
|---|---|---|
| OUTPUT: | Maximum operation voltage. | 30 V |
| | Minimum operation voltage. | 3.6 V + 20 mA * RL |
| | Isolation: | 4000 V min. |
| | Temperature stability: | 25 ppm / °C max. |
| | Long term stability: | 20 ppm / año max. |
| CONSTRUCTION: | Material: | Poliester; IP65 |
| | Total dimensions: | 22 mm wide, 75 mm heigth , 110 mm deep. |
| | Assembly | Rail DIN |
| | Weight: | 100 grams. |
| | Operation temperature: | -10 ... 50 °C. |

## CONNECTIONS




+V max.= 30V
+V min. = 3.6V + 20mA*RL

## OPERATION

The DIN-I-XXX galvanic isolators work by the transformer primary side reflected current, induced by load changes on its secondary side.
The output current loop feeds the output as well as the input circuit. The 3.6V voltage drop induced in the output current loop allow to feed the input circuit by means of a oscilator and the pulse transformer.
The input circuit modulates the load on the secondary of the transformer depending on the measured value. This load is reflected on the primary side and defines the 4..20ma output current loop.
In this way the energy necessary for the input side operation as well as the value measured in the input is transfered by only one device (the transformer). This is a great advantage since there is only one device across the isolated potencial barrier, reducing faillure probability.

## PART CODES:

**Temperature:**

Zero compensated thermocouples and RTD type PT100, 3 wires DIN437650, alpha=0.0385

| | | |
|---|---|---|
| DIN-I-PT100-1 | PT100, | 0... 160 °C |
| DIN-I-PT100-2 | PT100 | -25... 25 °C |
| DIN-I-PT100-3 | PT100 | -50... 0 °C |
| DIN-I-JTC-1 | J t.c. | 0... 250 °C |
| DIN-I-KTC-1 | K t.c. | 0... 400 °C |
| DIN-I-KTC-2 | K t.c. | 0... 1000 °C |

**Voltage and Current:**

In the AC voltage and current modules, output is calibrated for RMS value of a senusoidal input, but the measurement is according to the absolute value average of the input. The input frequency range is 40-400Hz. and the maximum error is 0.5%.

| | | |
|---|---|---|
| DIN-I-VDC-5 | 0... 5 Volts dc | |
| DIN-I-VDC-10 | 0... 10 Volts dc | |
| DIN-I-VDC-600 | 0... 600 Volts dc | |
| DIN-I-VAC-600 | 0... 600 Volts ac | High voltage AC network measurement. |
| DIN-I-IAC-5 | 0... 5 Ampers. ac | Use with current transformer. |

**DC milivolts.**

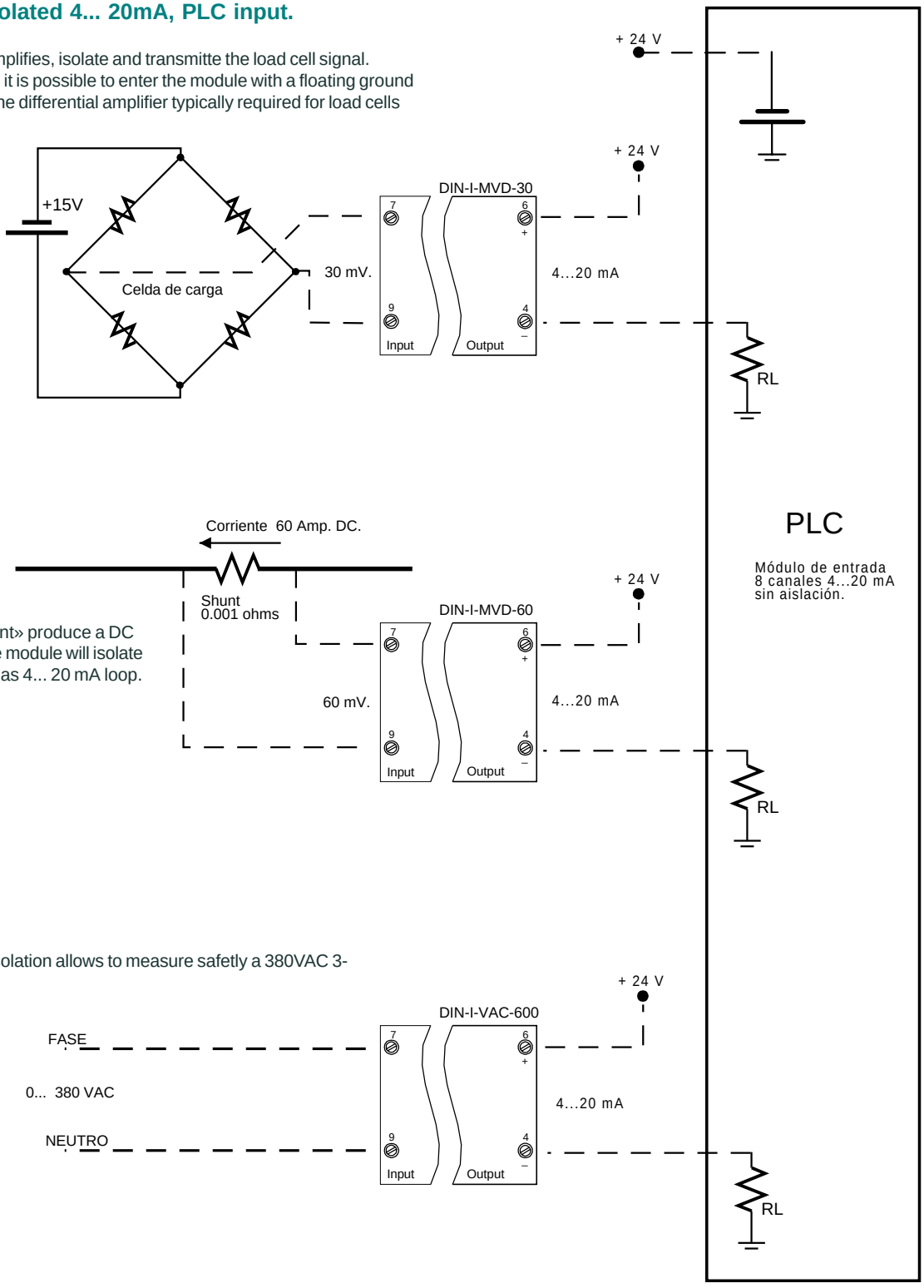
Appropriate for «load cells» and « current shunts».

| | | |
|---|---|---|
| DIN-I-MVD-10 | 0... 10 mV dc | 20 K ohm |
| DIN-I-MVD-20 | 0... 20 mV dc | |
| DIN-I-MVD-25 | 0... 25 mV dc | |
| DIN-I-MVD-30 | 0... 30 mV dc | |
| DIN-I-MVD-40 | 0... 40 mV dc | |
| DIN-I-MVD-50 | 0... 50 mV dc | |
| DIN-I-MVD-60 | 0... 60 mV dc | |
| DIN-I-MVD-80 | 0... 80 mV dc | |
| DIN-I-MVD-100 | 0... 110 mV dc | 200 K ohm |
| DIN-I-MVD-120 | 0... 120 mV dc | |

## APPLICATIONS

### multiple isolated 4... 20mA, PLC input.

The module amplifies, isolate and transmitte the load cell signal. Being isolated, it is possible to enter the module with a floating ground without using the differential amplifier typically required for load cells




A «current shunt» produce a DC voltage that the module will isolate and transmitte as 4... 20 mA loop.

The galvanic isolation allows to measure safetly a 380VAC 3-phase voltage.

## FOR MORE INFORMATION: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